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The Nutritional Knowledge, Food Choices and Exercise Habits of Students at Langston University

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THE NUTRITIONAL KNOWLEDGE, FOOD CHOICE, AND EXERCISE HABITS OF STUDENTS AT LANGSTON UNIVERSITY

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AND EXERCISE HABITS OF STUDENTS

AT LANGSTON UNIVERSITY

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CHAPTER I

INTRODUCTION

The nutritional knowledge, food choice, and exercise habits of an individual determine his or her overall health and life expectancy. Information on these topics enables nutrition educators to develop strategies to improve knowledge and to tailor educational efforts which affect a large number of persons. Poor health in America today is an ever present reality. Heart disease, cancer, diabetes mellitus, cerebrovascular diseases, renal diseases, and pulmonary diseases are causes of death related in part to lack of nutritional knowledge and poor eating and exercise habits. A few of these diseases are chronic in nature and are the most deadly.

Statement of the Problem

The process of nutritional assessment has long been used to identify specific nutritional problems that demand attention and correction. The major health problems in the United States and much of the industrialized world have nutrition at their root. The ten leading causes of death in the United States are in some way related to the lack of adequate knowledge, adequate nutrition, or both. Increasingly young people are experiencing obesity, high blood pressure, and high serum cholesterol. These conditions pose problems in nutrition and healthy lifestyles in general. Given that behavior is related positively to knowledge, good

nutrition and medical knowledge should have a positive effect upon eating habits. Studies show that if an individual is educated as to what is harmful, he or she usually demonstrates behavior changes to avoid possible negative effects. The general understanding, then, is that if an individual knows better, the individual will do better.

The problem associated with the gathering of information by using surveys is that the surveys are not ordinarily specific relative to specialized areas of the general population. Surveys on nutritional knowledge and eating and exercise habits of the general population abound; however, such surveys do not often take college students into account. College students are a large specialized populace. They account substantially for economic and political surveys which influence consumer spending and voting. Why not for health improvement. One concern is that this segment of the populace, 18 to 25 years of age, generally suffers from gross misinformation about the importance of nutrition and exercise.

More complex problems on which this study focuses include how the correcting of nutritionally oriented chronic diseases relate to the time used to correct lifestyle habits and how orienting peer groups impacts on the practice of healthier lifestyles. The longer such educational processes take, the worse the health situation grows for this age group. That there are few indepth studies on college students assessing their lifestyle relative to nutritional knowledge, eating, and exercise habits generally makes the need for such studies all the more

important.

Purpose of the Study

The purpose of this study is to collect data that will serve as a base on which to produce nutritional education programs for use specifically for the students that attend Langston University. The study has value in that it will determine the overall health status of students who attend Langston University and will serve as a guide for future studies undertaken on this subject. It is hoped that the study will prompt university officials and the general student body to consider the ramifications of poor nutritional knowledge and poor exercise habits. It is further hoped that actions will be taken as a result of this study to improve the health of the students of Langston University.

General Assumptions

This study is conducted under the following assumptions: 1) that student participation is voluntary and their information is confidential; 2) that students have a working knowledge of what good nutrition is and are, in some ways, applying that information in their daily lives; 3) that the nutritional knowledge level of the students in health-related fields is higher than that of those students not in those fields; and, 4) that the students majoring in health-related fields will prove healthier than those students in other areas.

Importance of the Study

The literature asserts, and statistics show, that the average American has little or no accurate knowledge of nutrition (Hertzler and Frary, 1993). Also, few studies have been done concerning students in historically and predominantly black colleges as to their nutritional knowledge level, dietary habits, exercise habits, and other such circumstances which may affect their health. This investigation examines all of the above for Langston University students and analyzes whether the findings of the literature for the general population hold true for this specialized population of students.

Scope of the Study

One limitation of this study is that it is geared to a specialized population of college students; therefore, it may not correlate to similar studies on the general population. The population is specialized because of the large concentration of African-American students which is not common to most colleges and universities. Also, because the study is focused upon college students at a predominantly and historically black university, it may not correlate with the findings of similar studies on college students. The data from studies of predominately white college students may show radical differences in food choice and eating habits. The questions on the survey are such that the amount of information obtained from student responses is limited.

Chapters two and three describe the literature used to support and give

definition to this study, the methods used to gather the necessary data, and the procedures used in the analysis of that data. Chapters four presents the results, and chapter five lists recommendations which conclude the written report of the study.

CHAPTER II

REVIEW OF LITERATURE

The general lack of literature concerning the eating and exercise habits and the nutritional knowledge of college students in historically black colleges and universities (HBCU's) prompted the investigator to evaluate the problem through the perspective of the general population and then apply the findings of the literature, where applicable, to the specialized population of college students.

Dietary Habits and Food Choice

According to Levy and Heaton (1993a), food choice and dietary patterns are generally controlled by the desire to lose weight. Their research focused on the weight control practices of adults in the United States trying to lose weight. They used a survey that questioned 1,431 persons (1,030 women and 401 men) as to strategies used to lose weight, the successes of the weight loss, the duration of the weight loss, and foods eaten and not eaten in their quest to be thinner. Of these respondents, thirty-three (33%) percent of the women and twenty (20%) percent of the men were trying to lose weight. The techniques used most often were seeking information as to how to accomplish weight loss, dieting, and exercise. The most prevalent dieting practices were skipping meals, weighing regularly, and taking vitamins and meal supplements. The important practices of recording food ingested and counting calories were not done by the respondents; therefore, the

question of adequate knowledge surfaces.

The most popular form of exercise reported by the respondents was walking. Walking is a recommended form of exercise that the American Heart Association supports and promotes (Blair, 1993). From their studies, Levy and Heaton (1993a) conclude that efforts should be directed toward increasing the long-term effectiveness of individual weight loss, thus implying the need for more effective forms of nutritional education.

Reports alluded to the question of stability of the dietary habits and food choice, but none was as specific as Hertzler and Frary (1989) who studied the diet of college students. Their study was conducted at a large comprehensive land-grant university with an enrollment of 22,000 students. The sample used for the survey consisted of students who were nearing the end of an introductory nutrition course. In 1984, these 212 students were asked to identify their patterns of food choice and usage, the changes that had occurred in their food habits, and previous nutritional background. The report establishes certain themes in collegiate nutritional habits. For example, it asserts that forty-three percent (43%) of the students surveyed reported skipping meals more than half the time. Hertzler and Frary (1989) found that the practice of skipping breakfast is not meaningfully related to year in school, frequency of snacking, or to cooking experience. The report makes the distinction that the men surveyed were more likely to eat breakfast at a fast food operation than were women. As far as other eating habits were concerned, eighty-one percent (81%) of the respondents reported that they

snacked more than four times a day. Snacks can contribute significantly to nutrient intake, and the report states that students tend to select the most healthy snacks when presented with a choice. Forty percent (40%) of the students selected frozen/canned vegetables and fresh/frozen meat as the foods prepared most often. The response for grains/pastas and fresh vegetables was only fifteen percent (15%) each. Fresh fruit and vegetables have long been known to have a positive effect on the diet when chosen at high frequencies. Men selected more frozen dinners and packaged convenience foods than women.

The same survey reported that forty-nine percent (49%) of the respondents were not taking vitamins and /or mineral supplements at the time of the survey. Eight percent started taking supplements during the introductory nutrition course, and five percent stopped taking supplements during this period. According to the authors, fifty (50%) to sixty (60%) percent of the American population uses some form of vitamin and mineral supplementation.

As far as the effect of nutrition education upon the students' eating habits was concerned, forty percent (40%) of the students reported an increase in the use of vegetables and fifty percent (50%) noted an increase in the use of dairy products. Other moderate increases were found in the uses of fruit (25% increase) and breads/cereals (23% increase). The authors conclude that more research as it relates to the influence of education on eating habits should be conducted.

Exercise Habits

The literature reviewed gives no clear indication of the attitudes or practices in areas related to exercise and the college student. Nevertheless, there are numerous studies on the effects of physical inactivity on health and on the need for increased physical activity awareness for the entire general population.

Lewis, et al (1993) conducted two surveys of approximately 1,200 respondents on physical activity of the residents of eight rental communities in Birmingham, Alabama. The respondents were most frequently young African American adult women. Thirty percent (30%) of the respondents in both surveys reported no participation in at least one of the thirteen physical activities listed in the surveys for the previous year. Nearly half of the respondents reported activity levels equivalent to less than walking four hours per week for eight months of the year. Respondents who were younger and male were significantly more likely to have higher activity levels. The author concludes that a sedentary lifestyle is common among this low-income minority group and that interventions to promote exercise in these communities are needed. The article relates low activity levels with low-income status, and many students of historically and predominantly black colleges are from such backgrounds.

In addition to this study, the American Heart Association Prevention Conference III entitled "Behavior Change and Compliance: Keys to Improving Cardiovascular Health" produced several articles which delineated the behaviors that influence the propagation of and the prevention of one of America's most

deadly chronic diseases, heart disease. In a keynote address, Farquhar (1993) gives sedentary lifestyle as one of the causes and risk factors associated with heart disease. Furthermore, Levine, et al (1993) asserts that weight reduction coupled with increased activity reduces the occurrence of high blood pressure substantially. Shinton (1993) states in an article on the reoccurrence of stroke in exercising patients that the reoccurrence of stroke was reduced as the patients added exercise as a regular part of their lifestyle. The benefits of physical activity are numerous, and the occurrence of the sedentary lifestyle has not been adequately documented in students.

Many of the practices in the industrialized world relative to food and exercise are geared toward weight-loss, and physical activity is limited to achieving that goal. Nevertheless, the benefits of exercise in the weight-loss regimen are discussed in detail by Blair (1993). He asserts that, although controversial, the benefits of exercise are evident depending upon the following crucial factors: 1) the degree of obesity or overweight of an individual; and 2) the duration of the regimen period (meaning that it would take longer for an obese person to become fit as opposed to a leaner person due to the sustained high negative caloric expenditure required to effect change in body composition). Blair emphasizes that understanding that "weight alone may not be as important as the distribution of body fat in the prediction of disease risk" (1993a). Overall, Blair (1993a) states that from available studies the effectiveness of dieting alone is not more effective than exercise alone; however, when the two treatments are combined they produce

results that neither of the two could produce alone.

Nutritional Knowledge

It is well documented that there exists a general lack of accurate nutritional knowledge in America (Levine, et al, 1993; Faquahar, 1993; and Lewis, et al, 1993). Nutritional knowledge status is a indicator as to which foods are being incorporated into the diet and, in turn, determines the overall state of health later in life (McKenize, et al, 1991). Among minority populations a higher prevalence of obesity and obesity-related diseases is indicative of a fundamental lack of nutritional knowledge (Kumanyika, 1993). The problem in nutritional knowledge as related to disease is that the messages that consumers receive often clutter the real truth about total food choice habits with unwarranted preoccupation with individual foods and disease problems (Levy, et al, 1993b). For example, people associate heart disease with saturated fat and cancer with fat and lack of dietary fiber; however, they do not understand that these problems are in part due to the commercialized manner in which foods are presented (Levy, et al, 1993b).

In a study on nutritional knowledge and dietary fats and cholesterol, Levy analyzes messages on foods and how these are related to what people know and do not know. The results of his study indicate that consumer knowledge about dietary fat and cholesterol is poor and state that this is likely true for other foods as well (Levy, et al, 1993b). Levy (1993b) also finds that those with the highest levels of knowledge were most frequently white, middle-aged, and educated. The

issue of the minority population is lack of nutritional knowledge which is a prevalent theme in the literature (Levy, et al, 1993b; Brug, et al 1994). According to Kumanyika, minorities are three times as likely as whites to be obese and are at higher risk to develop diseases such as diabetes mellitus, cardiovascular diseases, and cerebrovascular diseases due to a lack of nutritional knowledge (1993). Although admitting variance among the different ethnic minority groups, Kumanyika asserts that the significance is enough to warrant special attention to the potential medical crisis (1993). Furthermore, he recommends that, along with additional study, efforts geared toward prevention of obesity be initiated by using an educational program to increase nutritional awareness among these populations (Kumanyika, 1993).

Pi-Sunyer (1993) asserts that obesity, which is highly prevalent among minorities, is primarily responsible for the disease conditions of diabetes mellitus, hypertension, cardiovascular disease, respiratory disfunction, and certain forms of cancer, all of which are preventable. The literature consistently states the need for accurate nutritional information presented in an appealing, concise, and usable format for easy incorporation into the daily lifestyle. Only recently, however, have there been efforts to educate children as to how to maintain their health with the use of good nutritional knowledge applied sensibly through a physically active, wise food usage lifestyle. The results of such an effort can be nothing but positive.

Few articles exist on the practical application of knowledge and a healthy lifestyle in the young adult. It is feasible that the university could be the best place

for the type of research that investigates behavior relative to food consumption, for there are sure to be college students who have substantial knowledge of nutrition but are not applying their knowledge to themselves.

The medical community is re-evaluating how it sees the young as it considers the needs of people with chronic diseases who have made adverse lifestyle choices and who are in hospitals across the country. The answers to the crises in health in America are prevention and increased education, or so says the literature.

CHAPTER III

METHODOLOGY

Langston University is an historically and predominantly black land-grant university located forty-five minutes away from Oklahoma City and one hour and thirty minutes from Tulsa. It has a total enrollment of over 4, 000 students including the two branch campuses in Oklahoma City and Tulsa. The main campus has approximately 2,000 students with many commuters. The respondents of the survey are from the main campus in Langston. The instrument used to collect the data for this investigation is a questionnaire distributed to a sample of 126 students grouped into two categories based upon major and academic classification. The instrument was developed and placed in two test run trials with adjustments occurring after each trial for clarity and conciseness. Statements from students in health-related and nonhealth-related majors are analyzed for knowledge and habits. The survey allows for a range of age from seventeen to fifty years. The classes the students were enrolled in at the time of the survey were Introduction to Nutrition, Human Physiology, Zoology, and Advanced Composition. Each student participated in the survey with his/her classmates. The courses were selected to provide a random population of students. The survey asks questions about lifestyle and dietary and exercise habits. The survey provides information about ethnicity, marital status, living arrangements, relative income, classification, and academic concentration, which are also the descriptive variables.

Information on age, height, and weight was obtained. The data were analyzed using the SAS statistical analysis package. The results will be used to encourage the development of nutrition education materials and also for further investigation on similar issues. The data will be presented in scientific meetings.

CHAPTER IV

RESULTS AND DISCUSSION

Demographic Information

Frequencies developed using the SAS statistical analysis program are presented in this chapter. The total number of respondents to the survey was 126. Forty-nine (38.9%) of the respondents were male and seventy-seven (61.1%) were female. The 126 participants included 29.37% freshman, 29.37% sophomores, 28.57% juniors, 12.7% seniors. Nearly sixty-four percent (63.5%) of the participants were from the School of Nursing and Health Professions in which all of the students are health-related majors. The other schools were represented as follows: 6.35%, School of Business; 6.35%, School of Education and Behavioral Sciences; 16.67%, School of Arts and Sciences; and 6.35%, School of Environmental Sciences. The age of the respondents covered the normal spectrum for college age students. Eighty-eight percent of the respondents were age 17-26. Eleven percent of the respondents were over thirty years of age (Table I). The vast majority, eighty-one percent (81%), of the respondents were single and lived alone. In addition, more than half (50.8 %) of the respondents lived on campus meaning that their primary source of food was the cafeteria. The majority of the students had an income of zero to $5, 000.00 annually. This figure is of concern for off-campus students because when the income is low it is not easy to afford a balanced diet.

Nutritional Knowledge

The section of the survey on nutritional knowledge includes questions on the amount of fat in foods. The respondents had excellent nutritional knowledge based upon questions dealing with fat content (Table II). The participants responded correctly to each of the five questions with an average of over seventy-eight percent (78%) . This is an interesting finding considering the results on food choices presented in the next section.

Food Choice Habits

The food choice habits of the students in this survey do not correlate with the findings on the majority population of college students (Hertzeler and Frary, 1989). Considering that seventy percent (70%) of the respondents were African-American/Black, the food habits differ greatly from the general population. The literature consistently shows that high incidences of heart attack, stroke, high blood pressure, and other cardiovascular and cerebrovascular disease are associated with high fat intake. Nearly fifty-two percent (52%) of the respondents admitted to eating fried and breaded foods more than three times per week (Table III). African-Americans prefer fried foods far more than other segments of the population. The frying of food as a preparation technique ensures large amounts of fat in the diet. Nearly one-third of the students admitted to eating high fat meats (i.e., bacon, sausage, lunchmeats, etc.) three times per week or more.

Table I

Social and Demographic Charactistics of the Sample

	Number	Percent
Gender		
Males	49	38.9
Females	77	61.1
Total	126	100.0
Race		
African American/Black	90	71.4
Caucasian/White	34	27.0
Other	2	1.6
Marital Status		
Single	102	81.0
Married	13	10.3
Divorced	8	6.3
Separated	1	0.8
Living Together	2	1.6
Age Groups		
17-26	111	88.1
27-34	7	5.6
35 and over	8	6.3
Major by School		
Business	8	6.3
Education and Behavioral Sciences	8	6.3
Arts and Sciences	21	16.67
Environmental Sciences	9	7.1
Nursing and Health Professions	80	63.5
Academic Standing		
Freshman	37	29.4
Sophomore	37	29.4
Junior	36	28.6
Senior	16	12.7

Table II

Knowledge of Foods Lower in Fat and Cholesterol

Type of Food	Correct Answer		Incorrect Answer		Don't Know		Total	
	No.	%	No.	%	No.	%	No.	%
Sherbert or Ice cream	87	69.0	23	18.3	16	12.7	126	100
French Fries or Baked Potato	103	81.7	13	10.3	10	7.9	126	100
Bologna Sandwich or Boiled Ham Sandwich	82	65.1	25	19.8	19	15.1	126	100
Cheeseburger or Hamburger	99	78.6	13	10.3	14	11.1	126	100
Whole milk or 2% fat milk	101	80.2	13	10.3	12	9.5	126	100

Table III

Food Choice Frequencies

	Seldom		1 to 2 times per week		3 to 5 t imes per week		Daily		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
a. Fried or breaded Foods	9	7.1	50	39.7	42	33.3	23	18.5	124	100
b. Bacon, sausage, lunchmeats, and high fat meats.	40	31.7	52	41.3	30	23.8	4	3.2	126	100
c. Whole milk, cheeses,and ice cream.	19	15.1	39	31.0	28	22.2	40	31.7	126	100
d.Rich desserts,cakes, and pastries.	54	42.9	52	41.3	15	11.9	5	4.0	126	100
e. Sauses,gravies, salad dressings, and mayonnaise.	24	19.0	56	44.4	34	27.0	12	9.5	126	100
f. Butter or margarine on vegatabies,dinner rolls, or toast.	16	12.7	54	42.9	36	28.6	20	15.9	126	100
g. Bread, cereals, pasta, and rice.	9	7.1	45	35.7	36	28.6	36	28.6	126	100
h. Potatoes, sweet potatoes, corn, and peas.	15	11.9	54	42.9	37	29.4	20	15.9	126	100

Table III (cont.)

Food Choice Frequencies

	Seldom		1 to 2 times per week		3 to 5 times per week		Daily		Total	
	No.	%	No.	%	No.	%.	No	%	No.	%
i. Whole fruit with and/or seeds.	22	17.5	57	45.2	27	21.4	20	15.9	126	100
j. Vitamin C rich fruits.	27	21.4	60	47.6	25	19.8	14	11.1	126	100
k. Dark-green leafy vegatables.	23.	18.3	56	44.4	36	28.6	11	8.7	126	100
l. Dark-orange and yellow vegatables.	67	53.2	36	20.6	16	12.7	7	5.6	126	100
m. Lean meats	22	17.5	50	39.7	40	31.7	14	11.1	126	100
n. Eggs and dishes made with eggs	38	30.2	57	45.2	26	20.6	5	4.0	126	100
o. Nuts and beans	63	50.0	48	38.1	13	10.1	1	0.8	125	100
p. Canned or processed foods	43	34.1	52	41.3	19	15.1	12	9.5	126	100
q. Candies, cookies, and other sweets.	34	27.0	28	22.2	34	27.0	30	23.8	126	100

In addition, over seventy percent (70%) of the respondents admitted to eating sauces, gravies, and salad dressings two to five times per week. Fifty-six percent (56%) admitted to using butter or margarine when eating their foods three to five times per week or daily. These rather large numbers give reason for concern as well as for nutrition education to occur to encourage improvement of the health of this segment of the population.

Nearly fifty-two percent (51.8%) of the participants use lean meats such as poultry and fish either three to five times per week or daily. This is encouraging as doctors and dieticians are recommending these meats for consumption (Farquhar, 1993). Other foods that were recommended as part of a healthy diet are listed in the Dietary Guidelines (U.S. Department of Agriculture, 1990) and include grains, cereals, and pastas which nearly one-third of the respondents said they never eat. Student responses for whole fruit, dark green leafy vegetables, dark orange and yellow vegetables, and nuts and beans were similar to those given for grains, cereals, and pastas.

Another important finding was that although the respondents said that they eat a variety of foods from the Food Guide Pyramid, there were obvious contradictions. Also, those who have health-related majors had overall food choice habits that were just as bad as, and in a few cases worse than, their nonhealth-related major counterparts. Furthermore, when students were asked about sugar in their diet thirty-nine percent (39%) said that they never limit the amount of sugar in their diet, which is confirmed by their food choice habits.

Fifty-one percent (51%) choose high sugar foods such as candies, pastries and other sweets on a daily or near daily basis. Forty-three percent of the respondents use vitamin supplementation. This finding is significant in that students are perhaps not aware that a well balanced diet can provide all of the nutrients necessary to meet all nutritional requirements.

Culture issues affect the food choice patterns of people. Education is needed to help overcome the impulse to follow the culture pattern of eating and to choose foods that meet standards of proper nutrition. Students are not eating a variety of foods, not limiting the amount of fat, saturated fat, and cholesterol in their diets, and not choosing foods that are readily incorporated into a well balanced, nutrient dense diet. The identification of methods of teaching the basics of nutrition in an easily understandable manner should yield positive results in chronic disease prevention among African-Americans.

Exercise Habits

Only thirty-four percent (34%) of the respondents maintain a desired body weight (Table IV). Of the men forty-three percent (43%) say that they always maintain a desired body weight. Of the women, only twenty-eight percent (28%) say the same. The current understanding of the problems associated with obesity and the literature in that area associates obesity with cardiovascular and cerebrovascular diseases and diabetes mellitus as well as with pulmonary diseases.

Table IV

Frequency of Exercise Habits

	Always		Almost Always		Sometimes		Almost Never		Never		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
a. I maintain a desired weight, avoiding overweight and underweight.	43	34.1	26	20.6	27	21.4	18	14.3	11	8.7	125	100
b. I do vigorous exercise for 15-30 min. at least three times a week.	22	17.5	16	12.7	50	39.7	24	19.0	13	10.3	125	100
c. I do exercises to enhance my muscle tone for 15 to 30 min. at least three times a week.	20	15.9	14	11.1	41	32.5	33	26.2	17	13.5	125	100
d. I use part of my lesiure time participating in individual, family, or team activities that increase my fitness level.	16	12.7	23	18.3	47	37.3	25	19.8	14	11.1	125	100

Kumanyika (1993) states that paying no attention to body weight frequently leads to the chronic disease states that characterize the obese.

In addition, fifty percent (50%) of the respondents admit to never exercising vigorously by walking, doing aerobics, or exercising to enhance muscle tone by calisthenics or weightlifting. Furthermore, thirty-nine percent (39%) of the respondents say that they do not even choose activities in their leisure time that have potential to increase their fitness level. Many studies show the benefits of exercise and emphasize a lifestyle characterized by activity as the most healthy (Farquahr 1993; Blair 1993a; Blair 1993b). The need for education on the benefits of exercise is obvious.

The need for an increased awareness among students about the benefits of starting an exercise program early in life would perhaps help to discourage inactivity; however, nutrition education must be accompanied by physical fitness instruction to effect improving the length and quality of life (Shinton, 1993).

Other Factors

Additional information on habits affecting health was revealed by the survey. Nearly twenty-five percent (25%) of the student population surveyed smoke. This is a concern because smoking has been linked to (either causing or exacerbating) several forms of cancer and other diseases, especially those that affect the lungs and cause emphysema and asthma among others. Another issue the questionnaire addressed is frequency of physical exams. The survey found that

sixty-four percent (64%) of the participants report having physical examinations each year.

When asked about stress sources in their lives, sixty percent (60%) of the students responded that the events associated with their schooling give them the most stress. The total personal life is second as a major source of stress at twenty-five percent (25%). Stress is often related to when and in what manner people choose to eat (Farquahr, 1993; Levine, et al 1993). The family history of chronic disease in students is also an item on the survey. The literature indicates that cardiovascular and cerebrovascular diseases, cancer, hypertension, diabetes mellitus, renal and pulmonary diseases have nutritional and lifestyle causes. Eighty-four percent (84%) of the respondents have a family history of hypertension. Forty-nine percent (49%) of the respondents have a family history of diabetes mellitus. Forty-three percent (43%) of the respondents have a history of cancer. Major cerebrovascular and cardiovascular disease conditions in family histories of the respondents average twenty-five percent (25%). Furthermore, nearly twenty-eight percent (28%) of the respondents have a family history of alcoholism. This is of particular significance because of the high rate of alcohol use of the students surveyed. Nearly fifty-five percent of the students surveyed say that they either almost always or always drink alcoholic beverages (Table V). Overall, the findings of this study indicate that the health status of the Langston University student need to be improved. Several options are availble for accomplishing this, however, the best option for improving the health of students

at Langston University is a nutrition education program integrated with components of physical education to ensure adequate training on how these aspects come together in the development and maintenance of good health. A program of easy-to-understand nutritional education and physical education could be the first step in improving health habits and therefore effecting better health of Langston Univerisity students.

Table V

Frequency of Food Regualtion Habits

	Always		Almost Always		Sometimes		Almost Never		Never		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
a. I eat a variety of foods.	37	29.4	41	32.5	38	30.2	8	6.3	1	0.8	125	100
b. I limit the amount of fat, saturated fat, and cholesterol I eat.	16	12.7	32	25.4	44	34.9	23	18.3	10	7.9	125	100
c. I limit the amount of salt I eat.	24	19.0	27	21.4	37	29.4	24	19.0	13	10.3	125	100
d. I limit my sugar intake.	17	13.5	22	17.5	36	28.6	28	22.2	22	17.5	125	100
e. I drink alcoholic beverages.	8	6.3	5	4.0	44	34.9	27	21.4	42	33.3	125	100

CHAPTER V

CONCLUSION AND IMPLICATIONS

The findings of this study show that the Langston Univeristy students have a good general nutritional knowledge level. However, the students do not use the knowledge to establish good habits in their everyday experiences with respect to food choices. Furthermore, the lack of enthusiasm where exercise is concerned poses a threat to health status improvement for the college student population segment. Exercise and physical inactivity may be associated with income level (Lewis, 1993); however, the evidence is inconclusive relating to this. Understanding of the dynamics of weight control practices, modes of food behavior, and other concerns can also impact upon how much people exercise.

The other issue is that of family history and its role in the susceptibility of a person to a chronic disease. Many of the chronic diseases have been shown to run in families, but to the extent that this is related to nature or nurture is still a matter of debate. Years ago people thought of overweight and obesity as a matter of willpower and discipline (Pi-Sunyer, 1993). It has only been in the last fifteen to twenty years that the literature entertains the argument that these issues are related and that chronic diseases take a period of time to develop and cause damage because of unhealthy lifestyle. According to recent literature, obesity has many causes, some of which are genetics, environment, and lifestyle.

The fact that number of the student respondents in this survey have a family history of many of the chronic disease states supports the idea that nutrition education and physical education are needed at the family level. The possibilities for extending the lifespan of the community through sound nutritional and physical education programs are endless. The findings imply the need for a wellness program including healthy food choices and exercise instruction. Such a program could help to ensure that students leave college with information needed for good health.

The following recommendations are made:

1. Additional study on food choice habits (relative to study of fat consumption, fruit consumption, and complex carbohydrate consumption), exercise habits, and overall nutritional knowledge should be done.

2. Additional studies should be done on the influence of family history on food choice by taking the food choice information of students at different stages of development especially for African American students.

3. A wellness program, including healthy lifestyle instruction on food choice and exercise, should be established on the campus of Langston University through the Department of Health, Physical Education and Recreation in the School of Education and Behavioral Sciences and the

Department of Human Ecology through the Nutrition and Dietetics programs in the School of Environmental Sciences.

4. Nutrient analysis and food choice surveys need to be conducted in the Langston University cafeteria to identify foods students select from the choices they are presented.

5. Langston University officials should be committed to ensuring that facilities and resources are made available to implement whatever health-promotion or health-improvement initiatives they find appropriate.

If these recommendations are implemented, an important step will have been taken in the reclamation of the students' most valuable resource, their health.

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APPENDIX

Langston University

School of Environmental Sciences

Agriculture and Natural Resources • Human Ecology • Technology • Sponsored Projects

Dear Participants:

I am Preston Solomon, a senior majoring in Biology-PreMed/ Nutrition & Dietetics at Langston University. To fulfill the requirement for Honors program I am conducting a research project to assess the nutritional awareness, eating and exercise habits of student at Langston University. The results will help us to evaluate the relationship between nutritional awareness and lifestyle (eating habits and exercise). Your identity and information will remain absolutely confidential throughout the course of this study. Your assistance in completing this survey is greatly appreciated.

Respectfully,

Preston L. Solomon

Saigeetha Sangiah.

Saigeetha Sangiah, Ph.D.
Coordinator of Nutrition & Dietetics Program
Department of Human Ecology

An Equal Opportunity/Affirmative Action Employer

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(405) 466-3341
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Langston University Lifestyle and Health Survey

Directions: Please check the appropriate answer.

1. GENDER:
   _____ Male _____ Female

2. Age group:

_____ 17-21	_____ 31-34	_____ 43-46
_____ 22-26	_____ 35-38	_____ 47-50
_____ 27-30	_____ 39-42	_____ over 50

3. Which school or Division are you enrolled in?
   ___School of Business
   ___School of Education and Behavioral Sciences
   ___Division of Arts and Sciences
   ___School of Environmental Sciences
   ___School of Nursing and Health Professions

3a. Please indicate your major: _____

3b. What is your academic classification?
   ___Freshman
   ___Sophomore
   ___Junior
   ___Senior

4. Height and recent weight: Ht._____ Wt._____

5. Race:
   ___ Caucasian/white
   ___ African-American/Black
   ___ Native American/Indian
   ___ Hispanic
   ___ Other, please specify _____

6. Marital Status:

____ Single/never married	____ Married	____ Divorced
____ Separated	____ Living together	

7. Do your live on campus _____? Off campus _____?

8. Your average yearly income before taxes: (check one)

____ $ 0 - 1,999
____ $ 2,000 - 4,999
____ $ 5,000 - 7,999
____ $ 8,000 - 10,999
____ $ 11,000 - 14,999
____ $ 15,000 and above

9. Do you take vitamin and/or mineral supplements?
_____ Yes
_____ No

If yes, what kind(s)?
_____ B-complex
_____ Calcium
_____ Iron
_____ Vitamin E
_____ vitamin C
_____ Multi-vitamin
_____ Other, specify _____

10. Which of the following is your greatest source of stress?
(Please rank with "1" being the highest source.)
a._____ Schooling
b._____ Employment
c._____ Community involvements
d._____ Total Personal Life
e._____ Other, Specify _____

11. Do you or any of your family members have a history of any of the following diseases?
a._____ High blood pressure
b._____ Diabetes mellitus
c._____ Cancer
d._____ Stroke
e._____ Heart Disease
f._____ Obesity
g._____ Alcoholism

3

12. How often do you eat (at any meal or between meals) the following foods? Check the appropriate answer:

	Seldom/ Never	1 or 2 times a week	3 to 5 times a week	Daily
a. Fried or breaded foods	____	____	____	____
b. Bacon, sausage, lunchmeats and high fat meats (ribeye steak)	____	____	____	____
c. Whole milk, cheeses, and, ice cream	____	____	____	____
d. Rich desserts such as pies pastries, and rich cakes	____	____	____	____
e. Sauces, gravies, salad dressings, and mayonnaise	____	____	____	____
f. Butter or margarine on vegetables, dinner rolls, and toast	____	____	____	____
g. Several servings of bread, cereals, pasta or rice	____	____	____	____
h. Potatoes, sweet potatoes, corn, peas (starchy vegetables)	____	____	____	____
i. Whole fruit with skins and/or seed (berries apples pears , etc.)	____	____	____	____
j. Vitamin C rich fruits (oranges, melons)	____	____	____	____
k. Dark-green leafy vegetables (spinach, broccoli, greens)	____	____	____	____
l. Dark-orange and yellow vegetables (pumpkin, carrots, etc)	____	____	____	____
m. Lean meats (poultry, fish)	____	____	____	____
n. Eggs and dishes made with eggs	____	____	____	____
o. Nuts and beans	____	____	____	____
p. Canned or processed foods (ham, pickles, etc.)	____	____	____	____
q. Candies, cookies, and other sweets	____	____	____	____

13. If you diet please indicate the reasons by checking all that apply.
    _____ To lose weight
    _____ To feel healthier
    _____ Requested by a doctor
    _____ To gain weight
    _____ Because my friends are dieting
    _____ Other (please specify) _____

14. Please indicate meals eaten per day including snacks_____

15. Which of the following do you think is lower in saturated fats and cholesterol? (REPEAT FOR EACH PAIR)
    Place a check or an X in the appropriate space.

a.	____ Sherbet	(or)	____ Ice cream	____	Don't Know
b.	____ French fries	(or)	____ Baked potato	____	Don't Know
c.	____ Bologna sandwich	(or)	____ Boiled Ham sandwich	____	Don't Know
d.	____ Cheeseburger	(or)	____ Hamburger	____	Don't Know
e.	____ Whole milk	(or)	____ 2% fat milk	____	Don't Know

16. Please indicate your cholesterol level.

    _____ _____ Don't know

17. Please indicate whether you have regular annual physical check-ups.
    ___ Yes ___ No

18. If you smoke, indicate how many packs you smoke daily.
    Check the appropriate number:
    ___Less than one
    ___One
    ___Two
    ___Three
    ___More than three

19. For the following statements, please mark your answer with an "X" in the appropriate space provided.

	Always	Almost Always	Some-times	Almost Never	Never
I maintain a desired weight, avoiding overweight and under-weight.	____	____	____	____	____
I do vigorous exercise for 15-30 min. at least three times a week (run-ning, brisk walking, and aerobics).	____	____	____	____	____
I do exercises to enhance my muscle tone for 15 to 30 min. at least three times a week (weight lifting, calisthenics).	____	____	____	____	____
I use part of my leisure time participating in individual, family, or team activities that increase my level of fitness (gardening, bowling, golf, and baseball).	____	____	____	____	____
I eat a variety of foods from the basic four food groups (meats, dairy, fruits and vegetables, and cereals).	____	____	____	____	____
I limit the amount of fat, saturated fat, and cholesterol I eat (includ-ing fats on meats, in eggs, butter and cream shortenings).	____	____	____	____	____
I limit the amount of salt I eat by cooking with only small amounts, not adding salt at the table, and avoiding salty snacks.	____	____	____	____	____
I limit my sugar intake (especially snacks of sticky candy or soft drinks).	____	____	____	____	____
I drink alcoholic beverages.	____	____	____	____	____

Thank you for your participation.

VITA

Preston Lee Solomon

Candidate for two Degrees of

Bachelor of Science

and

Completion of

E. P. McCabe Honors Program

Thesis: THE NUTRITIONAL KNOWLEDGE, FOOD CHOICE, AND EXERCISE HABITS OF STUDENTS AT LANGSTON UNIVERSITY

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Honors: President, Beta Kappa Chi Scientific Honor Society 1993-1995; member, Alpha Chi National Scholarship Honor Society 1994-1995; Oklahoma Dietetic Association Scholarship, 1995; Oklahoma Home Economics Association Betty Gaffney Scholarship 1995; Who's Who Among Students in American Colleges and Universities, 1994 and 1995.

Activities: Member, Langston University Concert Choir 1990-1992; member, Langston University Marching Pride Band 1992-1995; member Kappa Kappa Psi National Honorary Band Fraternity, Inc. Delta Alpha Chapter, Executive Board 1993-1995; member Phi Beta Sigma Fraternity, Inc. Beta Epsilon Chapter, Executive Board 1993-1995; President,Simba Society of Langston University 1994-95; President, Langston University Chapter of National Pan Hellenic Council, Inc. 1994-1995.